

H37 A bit of arbitrage (student instruction sheet)

8.2 Balancing international payments

Your brief

You work in the purchasing department of a company that manufactures T-shirts. It is a very competitive industry so keeping your production costs as low as possible is vital. A large proportion of your monthly production costs is accounted for by the purchase of raw materials from overseas suppliers.

Each month you must purchase 100 tons of raw cotton from one of five suppliers, each one located in a different country.

The five countries and the export price per ton of raw cotton in their national currencies are listed below.

Country of supplier	Currency	Fixed price per ton of raw cotton	Today's US \$ exchange rate and price per ton
China	yuan renminbi = CNY	10,000 CNY	\$1 = 5 CNY (\$2,000 per ton)
Brazil	real = BRL	4,000 BRL	\$1 = 2 BRL (\$2,000 per ton)
Australia	Australian dollar = AUD	2,000 AUD	\$1 = 1 AUD (\$2,000 per ton)
Uzbekistan	Uzbekistan som = UZS	4,000,000 UZS	\$1 = 2,000 UZS (\$2,000 per ton)
Greece	euro = EUR	2,800 EUR	\$1 = 1.4 EUR (\$2,000 per ton)

The export prices per ton of raw cotton are fixed but the cost to your company of buying 100 tons each month will vary due to changes in exchange rates with the US dollar. Payment is always made with US dollars.

You will therefore need to be aware of world economic events prior to placing your order each month because these will affect exchange rates.

If the US dollar depreciates against the currency of the country with which you have placed your order, then the price you pay per ton will rise. For example, if the exchange rate of US dollars falls from US \$1 = 5 CNY to US \$1 = 4 CNY then the US dollar price per ton will rise from US \$2,000 to US \$2,500.

In contrast, if the US dollar appreciates against a currency then the price you pay per ton of cotton will fall. For example, if the exchange rate for the US dollar rises from US \$1 = 2 BRL to US \$1 = 2.5 BRL then the US dollar price per ton will fall from US \$2,000 to US \$1,600.

After each economic event is announced, try to predict what will happen to exchange rates and, therefore, to predict what the cheapest source of cotton will be. Then place your order for 100 tons (you can only choose one supplier and must place your order in full each time).

Market clearing exchange rates will be announced shortly afterwards so you can calculate the actual cost of your order. You cannot change suppliers at this time. Your business will be fined US \$1 million each time if you do.

Beware, because so many different factors can affect exchange rates they can be very volatile and unpredictable.

The business that has spent the least amount in US dollars on imported cotton at the end of 6 months makes the most profit.

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Company name: _____

Complete these columns only after
exchange rates are announced

Month	Economic events	Chosen country to place order with	Cost per ton in local currency	Total cost for 100 tons in local currency	US exchange rate outcome	Actual cost of 100 tons in US dollars
Today						\$200,000
1	Slowdown in Chinese economy; debt crisis in Europe continues	Greece	2,800 EUR	280,000 EUR	\$1 = 1.6 Eur	\$175,000
2						
3						
4						
5						
6						

Total \$ expenditure on imported cotton after 6 months >

\$